

# S&P Global Timber & Forestry Index

Investments in timber and forestry by large institutional investors and endowment funds have increased significantly in the past few years

**T**imber and forestry assets include a broad range of forest and paper products companies that have significant amount of forestland under management, timber investment management organisations and real estate investment trusts which invest solely in timber.

Investments in timber and forestry by large institutional investors and endowment funds have increased significantly in the past few years. This increased interest is driven by this segment's behaviour as an asset that provides stable returns and low correlation to traditional financial assets. In addition, timberland possesses unique investment qualities such as biological growth, which is a principle driver of the timberland returns, and finite supply. On the flip side, there is beta risk.

It is estimated that institutional investments in timber and forestry assets have grown from approximately \$4 billion in 1981 to over \$18 billion at the end of 2005. Harvard Management, which manages endowment and pension money for Harvard University, has allocated 10% of its \$27 billion assets to timber. Other well-known pension and endowment funds that have a vested interest in timber include Yale University, State Teachers Retirement Systems of Ohio, CalPERS, Delta Airlines and Massachusetts Pension Reserve Investment Management.

The long-term industry outlook for timber and forestland investment remains strong as the global demand for wood and paper products continues to exceed supply. The United Nations Food and Agriculture Organisation estimated that world consumption of wood and wood-related products will rise by 60% over the next 25 years. Environmental conservation has limited the amount of public land available for harvesting.

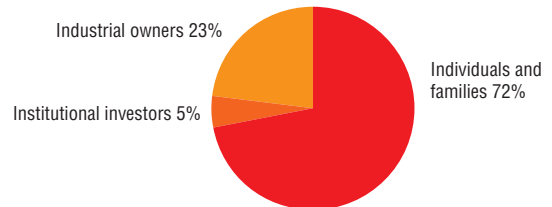
The S&P Global Timber & Forestry Index is designed to provide broad exposure to the investable global timber and forestry market. The index includes 25 large, liquid, listed forestry and timber stocks.

Timber and forestry investments have traditionally been less accessible to mid/small-sized institutions and retail investors due to high initial capital investment and a lack of investment vehicles. These investors are now able to tap into some of the benefits flowing from companies in both the timber and forestry industry. Meanwhile large investors, which access the segment directly, now have the tactical advantage of a highly liquid, and transparent index for meeting short- and medium-term investment objectives.

## Overview of the global timber and forestry market

It is estimated that the investable global timber and forest universe exceeds \$300 billion. Approximately two-thirds of

### 1. US forestland private ownership



Source: Forest Research Systems 2006

that is in the US<sup>1</sup>, accounting for over 350 million acres of privately-owned, managed forestland<sup>2</sup>. The remaining one-third is scattered in countries such as Australia, Brazil, Canada, Chile, China and New Zealand.

### Unique drivers of forestland investment returns and risk factors

Timber and forestland investment returns are driven by their following unique characteristics:

- **Biological growth:** Biological growth is considered to be the most significant factor, contributing over 60% of the total return<sup>3</sup>. Biological growth refers to a tree's growth in terms of its volume and value. Mature trees attract higher prices for their ability to be processed into lumber and wood products. The primary risk to biological growth stems from natural causes such as weather, insects and fire<sup>4</sup>. Other risk factors include government regulations on environmental conservation.
- **Timber prices:** Timber prices contribute approximately 30% of the total return. They are affected by macroeconomic variables such as GDP, housing starts, construction spending, interest rates and population growth. Timber prices, historically, have risen 3%

1 Mercer Investment Consulting, 'Timberland as an Investment for Institutional Portfolios', July 2006.

2 Forest Systems, 'Forestland Asset Class Overview', [http://www.forestsyste.ms.com/asset\\_class/asset.htm](http://www.forestsyste.ms.com/asset_class/asset.htm)

3 Forest Investment Associates, 'Illustrative Drivers of Timberland Returns', presentation.

4 RMK Timberland Group, 'Managing Risk', [http://www.rmktimberland.com/investing\\_risk.html](http://www.rmktimberland.com/investing_risk.html)

5 Cogent Partners, 'Unique by Nature, Timber Investments in a Global Economy', 2005.

above the rate of inflation<sup>5</sup>. During periods of high inflation, timber and forestry investments can act as an inflation hedge and provide capital preservation.

- ❑ **Land prices:** Appreciation in land prices, which in turn are influenced by rising timber prices, makes a small contribution to investment returns.

**Long-term industry outlook** .....

The long-term industry outlook for timber and forestland investment remains strong as the global demand for wood and paper products continues to exceed supply. The United Nations Food and Agriculture Organisation estimated that world consumption of wood and wood-related products will rise by 60% over the next 25 years<sup>6</sup>. Meanwhile, the global supply of timber appears to be decreasing. Environmental conservation efforts have restricted the amount of public land available for harvesting. Socio-demographic variables, such as population growth and aging homes, also put constraints on the resource.

**Methods of investing in forestry assets** .....

There are several methods for investing in timber. Each has its own advantages and disadvantages:

- ❑ **Direct ownership and management of timber and forest properties.** Direct investment in timber properties presents numerous challenges. Strong expertise and knowledge of specific geographic areas, forest harvesting and forest management are required.
- ❑ **Purchase of shares of publicly traded real estate investment trusts (REITs).** Investing in shares of publicly traded REITs that invest solely in timber and forestry provides the most liquidity. There are only a few timber REITs and shares of REITs tend to have higher correlation with traditional equity assets.
- ❑ **Purchase of shares of publicly traded companies whose primary line of business is forestry management and/or paper products.** There are a handful of timber and forest products companies globally with significant ownership of timberland. Separating them from other companies in the industry is challenging.
- ❑ **Investment in timberland investment management organisations (TIMOs), which are pooled funds that invest in timber and forest properties.** Many institutional investors gain access to timber through investing in TIMOs. TIMOs specialise in specific regions of the country/world where they have

local knowledge and forestry expertise. For private investors, however, TIMOs may not be a feasible option as they have high initial investments (\$5 million for a commingled fund or \$25 million–50 million for a separate account). Management fees range from 0.8–1.2% of the asset value annually. Liquidity tends to be low since TIMOs generally have a lock-up period of 10 years<sup>7</sup>.

**Institutional and retail investment** .....

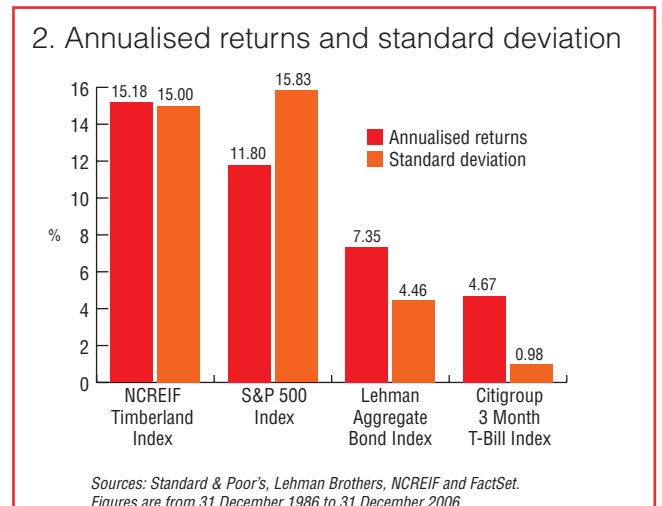
Institutional investments in timber and forestry have steadily increased over the past 20 years. It is estimated that institutional investments in timber and forestry assets have grown from approximately \$4 billion in 1981 to over \$18 billion at the end of 2005<sup>8</sup>. Harvard Management, which manages endowment and pension money for Harvard University, has allocated 10% of its \$27 billion assets to timber<sup>9</sup>. Other well-known pension and endowment funds that have a vested interest in timber include Yale University, State Teachers Retirement System of Ohio, CalPERS, Delta Airlines and Massachusetts Pension Reserve Investment Management<sup>10</sup>.

For mid/small-sized institutions and retail investors, who are unable to commit a large sum of money to private equity investments like TIMOs, accessibility to forestland investments remains limited. Moreover, the initial lockup period of 10 years or more poses a liquidity constraint on investors with a short/medium-term investment horizon. For these investors, listed timber assets are the only investment option.

**Risk/return profile** .....

Historically, forestland has generated favourable returns with lower volatility compared to other asset classes, as evidenced by the performance of the National Council of Real Estate Investment Fiduciaries (NCREIF) Timberland Index.

In addition to higher returns and lower volatility, timber and forestry assets have low correlation with other asset classes. This suggests that the addition of timber and forest assets to a portfolio of conventional assets can reduce the portfolio volatility.



6 United Nations Food and Agriculture Organisation (FAO), 'Global Forest Resources Assessment 2005', 2006.

7 Cogent Partners.

8 Mercer Investment Consulting.

9 Hilsenrath, John, 'Strong Demand Sets Timber Investing on Fire', *The Wall Street Journal*, 14 February 2005.

10 Mercer Investment Consulting.

**Listed timber and forestry assets** .....

Listed timber and forestry assets take two forms. They are

- ❑ Publicly traded shares of forest and paper products companies with timber and forestry assets under management.
- ❑ Publicly traded shares of REITs that invest solely in timber and forestry.

Some advantages of listed timber and forestry assets are:

- ❑ Accessibility for mid/small-sized institutions and retail investors
- ❑ Daily liquidity, as listed timber assets are traded on a stock exchange
- ❑ Global diversification

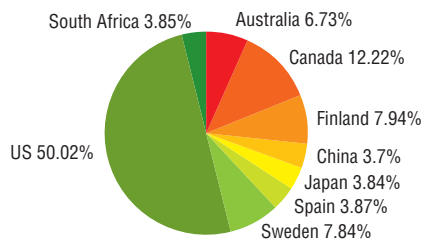
Some disadvantages are:

- ❑ High beta risk stemming from daily valuations on the exchanges.
- ❑ Only a small portion of the total timber market is securitised, packaged or otherwise available in an exchange listed format

**The S&P Global Timber and Forestry Index**

The S&P Global Timber & Forestry Index is comprised of 25 of the largest publicly traded companies engaged in the ownership, management or the upstream supply chain of forests and timberlands. The index is designed to provide liquid exposure to the leading publicly listed assets in the global timber and forestry industry, from both developed markets and emerging markets.

**5. Country diversification of the index**



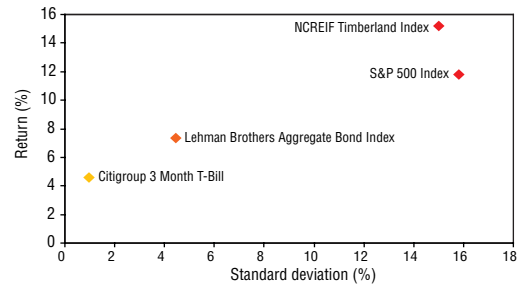
Source: Standard & Poor's; data as of 1 November 2006

**6. Sample securities**

Name	Index weight (%)	Country	Acreage under management (m acres)	Exchange
Weyerhaeuser Co	7.80	US	21.5	NYSE
Plum Creek Timber Co Inc	7.88	US	8.0	NYSE
Rayonier Inc	7.75	US	2.7	NYSE
Holmen AB	4.00	Sweden	2.5	OM
Gunns Ltd	2.50	Australia	0.605	ASX
Sappi Ltd	3.85	South Africa	1.35	JSE
Grupo Empresarial Ence SA	3.87	Spain	0.35	CATS
Sino-Forest Corp	2.29	China	0.88	TSX

Source: Standard & Poor's; data as of 1 November 2006

**3. Risk and return of asset classes**



Sources: Standard & Poor's, Lehman Brothers, NCREIF and FactSet. Figures are from 31 December 1986 to 31 December 2006

**4. Correlation coefficients of timber and other asset classes**

	S&P 500	Lehman US Aggregate Bond Index	NCREIF Timberland	Citigroup 3 Month T-Bill
S&P 500	1			
Lehman US Aggregate Bond Index	-0.10	1		
NCREIF Timberland	0.07	0.11	1	
Citigroup 3 Month T-Bill	0.09	0.22	0.23	1

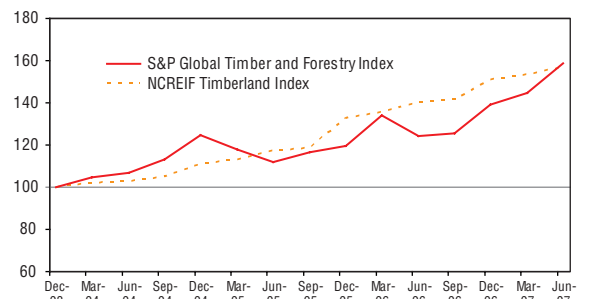
Sources: Standard & Poor's, Lehman Brothers, NCREIF and FactSet. Figures are from 31 December 1986 to 31 December 2006

**7. Risk and return profile**

%	NCREIF Timberland Index	S&P Global Timber & Forestry Index
<b>Returns</b>		
1 year	11.89	28.71
3 year	15.17	14.46
<b>Standard deviation</b>		
3 year	11.00	12.50

Source: Standard & Poor's, NCREIF; data as of 30 June 2007

**8. Growth of an investment**



Source: Standard & Poor's, NCREIF; data as of 30 June 2007

**9. Correlation to other financial indices**

S&P 500	Lehman Brothers US Aggregate Bond Index	Citigroup 3 month T-Bill Index	NCREIF Timberland Index
0.72	0.04	-0.04	0.11

Sources: Standard & Poor's, NCREIF, Lehman Brothers and FactSet; figures are from 31 December 2003 to 30 June 2007



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